Name:

at1113exam: Expand, factor, and solve quadratics (v315)

1. Solve the equation.

$$(9x - 8)(7x - 3) = 0$$

$x = \frac{8}{9}$ $x = \frac{3}{7}$

2. Expand the following expression into standard form.

$$(3x - 4)(9x - 2)$$

$27x^2 - 6x - 36x + 8$

$27x^2 - 42x + 8$

3. Expand the following expression into standard form.

$$(8x + 3)^2$$

$64x^2 + 24x + 24x + 9$

$64x^2 + 48x + 9$

4. Expand the following expression into standard form.

$$(7x + 3)(7x - 3)$$

$49x^2 - 21x + 21x - 9$

$49x^2 - 9$

5. Solve the equation.

$$9x^2 + 72x + 40 \;=\; 2x^2 + 5x + 4$$

$$7x^2 + 67x + 36 = 0$$
$$(7x + 4)(x + 9) = 0$$
$$x = \frac{-4}{7} \qquad x = -9$$

6. Factor the expression.

$$81x^2 - 16$$

$$(9x + 4)(9x - 4)$$

7. Solve the equation with factoring by grouping.

$$12x^2 + 10x + 18x + 15 \;=\; 0$$

$$(2x + 3)(6x + 5) = 0$$
$$x = \frac{-3}{2} \qquad x = \frac{-5}{6}$$

8. Factor the expression.

$$x^2 + 3x - 28$$

$$(x - 4)(x + 7)$$